Chapter 20: Mitigation Measures

A. INTRODUCTION

The technical analyses presented in Chapters 2 through 19 discuss the potential for significant adverse environmental impacts to result from the proposed project. Potential impacts were identified in the area of air quality. Measures have been examined to minimize or eliminate these anticipated impacts. These mitigation measures are discussed below.

Additional measures will be evaluated between the DSEIS and the Final Supplemental Environmental Impact Statement (FSEIS). The FSEIS will contain full information and commitments on all mitigation measures to be implemented with the proposed project. Because the identified impacts would occur as the development progressed and not all at one time, the FSEIS will also describe the anticipated schedule for the implementation of specific mitigation measures.

PRINCIPAL CONCLUSIONS

Potential impacts were identified in the area of air quality. The air quality stationary source analyses conclude that the proposed project would potentially result in significant adverse air quality impacts (affecting $PM_{2.5}$, SO_2 and NO_2 concentrations) on Riverside Center Building 5. This impact, would be the result of the proposed project's mixed use building (on projected development site 1) affecting the dispersion of the exhaust plume from the adjacent Consolidated Edison Powerhouse boiler stack. As a result, higher concentrations of pollutants may occur on the Riverside Center Building 5.

A potential mitigation measure that has been identified is the reduction of the proposed project's building height by 77 feet; this mitigation measure would fully mitigate and avoid the significant adverse air quality impacts on Riverside Center Building 5. This mitigation would not be required if wind tunnel modeling, which allows for more accurate predictions of pollutant concentrations from stationary sources and will be conducted between the Draft SEIS and Final SEIS, determines that the proposed project and/or any of the alternative building configurations would not result in any significant adverse air quality impacts.

B. AIR QUALITY

OVERVIEW

As discussed in Chapter 11, "Air Quality," existing and proposed developments near the proposed project were evaluated to assess whether the effect on plume dispersion from the Consolidated Edison Power House due to projected development site 1 would result in any significant adverse air quality impact on existing and proposed buildings in the vicinity of the project site. An analysis using the U.S. Environmental Protection Agency (EPA) AERMOD model was performed which showed that concentrations of 1-hour NO_2, 1-hour SO_2 and $PM_{2.5}$

were predicted to exceed the NAAQS and $PM_{2.5}$ interim guidance criteria, respectively, on a small portion of proposed Riverside Center Building 5, on the north and east façades, between the elevations of 430 and 480 feet (see Figure 11-2 in Chapter 11, "Air Quality"). This would be considered a significant adverse air quality impact.

Refined analysis will be undertaken between DSEIS and FSEIS, as described below. In addition, since that refined analysis has not yet been undertaken, in the event that exceedances are still identified, the feasibility of implementing mitigation measures has been explored to alleviate the projected impacts. These include alternate building configurations to be examined further between the DSEIS and FSEIS via a follow up wind tunnel analysis per a City-approved protocol.

REFINED ANALYSIS

In addition to the alternative building configurations, the proposed project analyzed in the DSEIS will be analyzed in the wind tunnel between the DSEIS and FSEIS. Given the unique building design, it is possible that more detailed analysis in the wind tunnel will allow for more accurate predictions of pollutant concentrations resulting from the proposed project. If it found that the proposed project would result in no significant adverse air quality impacts under this more refined wind tunnel analysis, air quality impacts would be considered fully mitigated.

In the event that exceedances are still projected, mitigation measures, described below, will be analyzed and an option that fully mitigates the significant adverse impacts will be selected and implemented.

PROPOSED MITIGATION MEASURES

ALTERNATIVE BUILDING DESIGNS

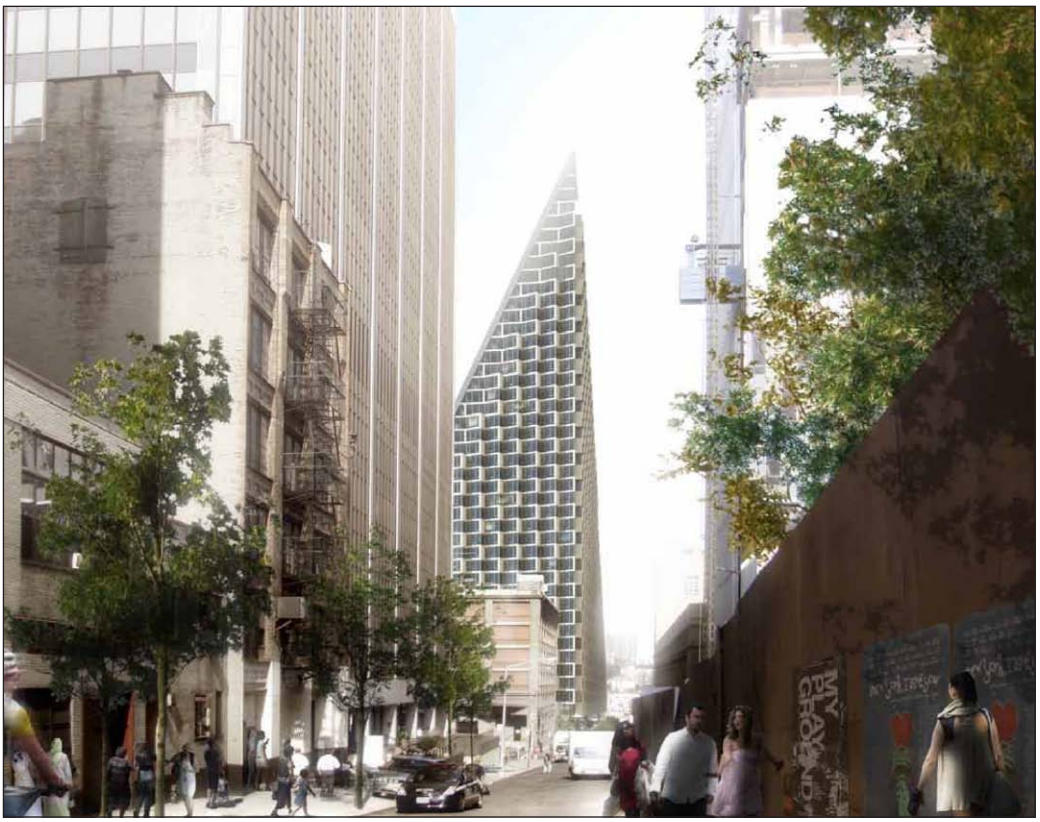
To avoid potential significant adverse impacts from the plume dispersion of the Consolidated Edison Power House boiler stack, alternative building configurations for projected development site 1 have been considered and will be analyzed between the Draft and Final SEIS. These include designs that would allow air to flow through the top of the building on projected development site 1, reducing the potential effects on plume dispersion from the Consolidated Edison Power House boiler stack. **Figure 20-1** shows one option (Option A), which would have on the top 77 feet portion of the building an open design with structural elements on the south façade, and louvers on the north and east façades. A second option (Option B) is presented in **Figure 20-2**, which is very similar to Option A except instead of louvers it would be open on all sides with structural elements. These designs will be analyzed in the wind tunnel between the DSEIS and FSEIS.

If it found that any of the alternative building configurations would result in no significant adverse air quality impacts, any of these building configurations could be selected, and air quality impacts would be considered fully mitigated.

In the event that exceedances are still projected, a reduced building height option, described below, which would fully mitigates the significant adverse impacts (as described below), will be selected and implemented.



View from Hudson River Park

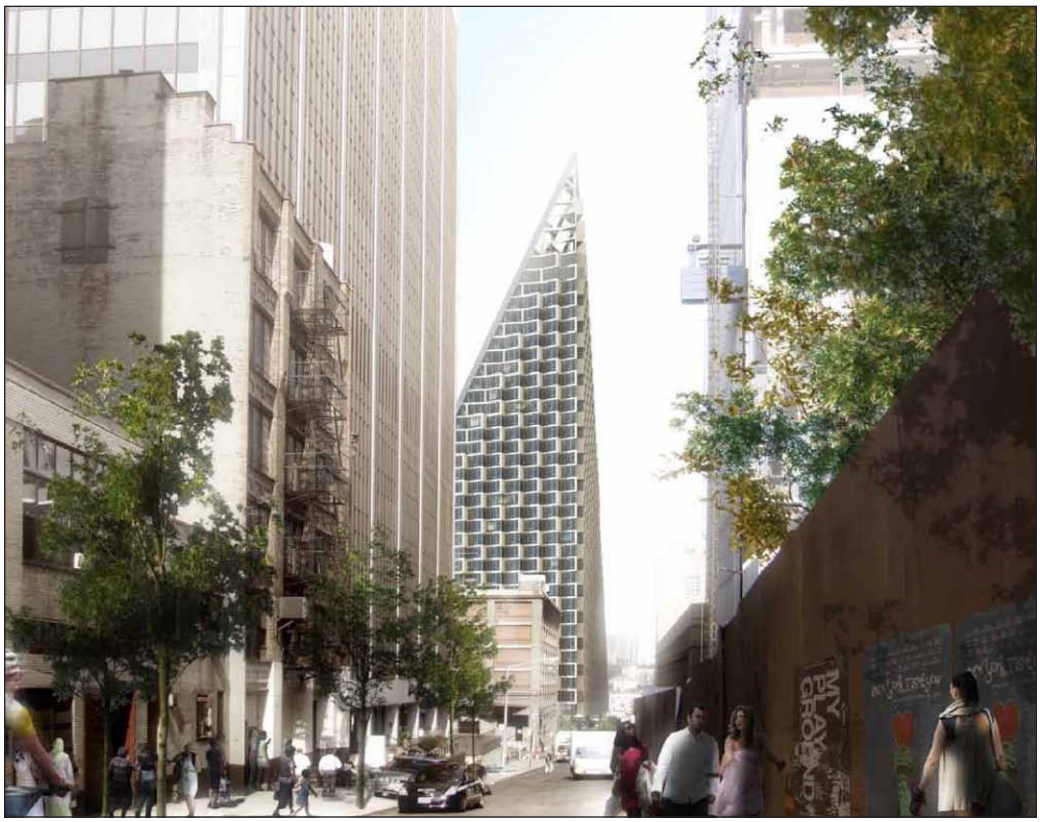


View along West 58th Street

Option A
Figure 20-1



View from Hudson River Park



View along West 58th Street

Option B
Figure 20-2

REDUCED HEIGHT BUILDING

An analysis was performed to determine whether the impacts described above affecting Riverside Center Building 5 can be mitigated by reducing the height of projected development site 1. The analysis was otherwise identical to the one presented in Chapter 11, "Air Quality," including emissions from both of the Consolidated Edison Power House sources and the proposed project's HVAC system. Using the AERMOD model, a building with a maximum overall height of 394 feet (77 feet lower than the height evaluated for the proposed project) resulted in predicted pollutant concentrations from the Consolidated Edison Power House that are identical to the No Build condition at existing and proposed developments. **Figure 20-3** shows the reduced height projected development site 1.[1]

Table 20-1 presents the maximum concentrations predicted by the AERMOD analysis of the reduced projected development site 1 for NO_2, SO_2 and PM_{10}. As shown in the table, the maximum predicted pollutant concentrations are below their respective standards for the NO_2, SO_2 and PM_{10} NAAQS. Therefore, no significant adverse air quality impacts are predicted for these pollutant standards. As shown in the table, at this reduced height, the proposed project would not affect plume dispersion from the Consolidated Edison Power House; therefore, potential air quality impacts would be fully mitigated.

Table 20-1
Future Maximum Predicted Concentrations from the Consolidated Edison Power House on Developments Within 400 feet of the Proposed Project
Reduced Building Height (μg/m3)

Pollutant	Averaging Period	Concentration Due to Stack Emission	Maximum Background Concentration	Total Concentration	Standard
NO_2	Annual	1.9	67.7	69.6	100
	1-hour (1) (2)	40.3	126.1	166.4	188
SO_2	3-hour	607.9	183.2	791.1	1,300
	1-hour (3)	102.7	78.5	181.2	196
PM_{10}	24-hour	12.6	63	75.6	150

Note:
(1) 1-Hour NO_2 concentrations were estimated using AERMOD PVMRM.
(2) Reported concentration is the maximum five-year average of the 98th percentile of daily maximum 1-hr modeled concentration added to the three-year average of the 98th percentile monitored background concentration
(3) Reported concentration is the maximum five-year average of the 99th percentile of daily maximum 1-hr modeled concentration added to the three-year average of the 99th percentile monitored background concentration. average combined concentration (Con Edison facility added to the ambient background).

The analysis also determined the maximum predicted increase in 24-hour and annual average $PM_{2.5}$ incremental concentrations on developments within 400 feet of the proposed project (see **Table 20-2**). On an annual basis, the maximum projected $PM_{2.5}$ increments would be below the applicable interim guidance criterion of 0.3 $\mu g/m^3$ for local impacts. As described in the Section D, *Air Quality Standards, Regulations and Benchmarks*, the city's interim guidance criteria for $PM_{2.5}$ states that 24-hour average $PM_{2.5}$ concentration increments that are predicted to be greater than 2 $\mu g/m^3$ but no greater than 5 $\mu g/m^3$ would be considered a significant adverse impact on

[1] Note that there are no SO_2 emissions from the proposed project's HVAC system, since the system would use natural gas, which does not contain sulfur.



View from Hudson River Park



View along West 58th Street

Reduced Height
Figure 20-3

air quality based on the magnitude, frequency, duration, location, and size of the area of the predicted concentrations. There are no receptor locations where the maximum predicted incremental concentrations of $PM_{2.5}$ would exceed 5 $\mu g/m^3$). As shown in **Table 20-2**, the maximum predicted 24-hour average $PM_{2.5}$ incremental concentration is 2.31 $\mu g/m^3$. The receptor location with the maximum continual 24-hour exposure was predicted on the south façade of Riverside Center Building 4, at an elevation of approximately 190 feet above grade. Two other receptor locations on the south façade of Riverside Center Building 4 (175 feet and 200 feet) and two locations on Riverside Center Building 3 were predicted to have a maximum predicted 24-hr average $PM_{2.5}$ incremental concentration of 2.1 $\mu g/m^3$ (225 feet and 240 feet). At each of these locations, exceedances were predicted with a maximum frequency of once per year, and only occurred in a maximum of two of the five years of data analyzed. Therefore, these 24-hour $PM_{2.5}$ concentrations are considered to be insignificant.

Table 20-2
Future Maximum Predicted $PM_{2.5}$ Increments from the Consolidated Edison Power House on Developments Within 400 feet of the Proposed Project
Reduced Building Height ($\mu g/m^3$)

Averaging Period	Maximum Increment	Incremental Threshold
24-Hour	2.31	5/2
Annual	0.03	0.30

Note: 24-hour $PM_{2.5}$ interim guidance criterion, > 2 $\mu g/m^3$ (5 $\mu g/m^3$ not-to-exceed value), depending on the magnitude, frequency, duration, location, and size of the area of the predicted concentrations.

Based on the results of this analysis, the reduced height building would fully mitigate air quality impacts associated with the proposed project. As discussed earlier, this mitigation would not be required if wind tunnel modeling to be conducted between the DSEIS and FSEIS determines that the proposed project and/or any of the alternative building configurations would result in no significant adverse air quality impacts. If the proposed project and/or alternative configurations are not shown to mitigate the impact, the reduced height building would be implemented to ensure that there would be no significant adverse air quality impacts. ✷